

### **AMENDMENTS TO THE CLAIMS**

The listing of claims below replaces all prior versions of claims in the application.

#### **Listing of Claims:**

1 (Canceled):

2 (Currently Amended): An apparatus for improving residual stress of piping, which irradiates an outer surface of a T-piping with a laser beam emitted from a laser head, said T-piping comprising a first piping having one end welded and connected to a tubular circumferential surface of a second piping, and

comprising:

a circumferential-direction position adjusting structure for moving the laser head along a circumferential direction about a tubular axis of the first piping;

a tubular axial-direction position adjusting structure for moving the laser head along a tubular axial direction of the first piping;

a radial-direction position adjusting structure for moving the laser head along a radial direction of the first piping; and

an emission-direction adjusting structure for changing an emission direction of the laser beam in a plane including the tubular axis of the first piping, by changing a direction of the laser head,

wherein the circumferential-direction position adjusting structure includes a rail mounted on a surface of the first piping,

wherein the rail includes a ring shape surrounding a periphery of the first piping, [[and]]  
wherein the circumferential-direction position adjusting structure further includes a cart  
[[travelling]] traveling on the ring-shaped rail as a track,

wherein the radial-direction position adjusting structure includes one end facing the first piping.

wherein the radial-direction position adjusting structure includes a guide roller provided at the one end thereof, and

wherein the guide roller makes a rolling contact with a circumferential surface of the first piping.

3 (Currently Amended): An apparatus for improving residual stress of piping, which irradiates an outer surface of a T-piping with a laser beam emitted from a laser head, said T-piping comprising a first piping having one end welded and connected to a tubular circumferential surface of a second piping, and

comprising:

a circumferential-direction position adjusting structure for moving the laser head along a circumferential direction about a tubular axis of the first piping;

a tubular axial-direction position adjusting structure for moving the laser head along a tubular axial direction of the first piping;

a radial-direction position adjusting structure for moving the laser head along a radial direction of the first piping;

a first emission-direction adjusting structure for changing an emission direction of the laser beam in a plane including the tubular axis of the first piping, by changing a direction of the laser head; and

a second emission-direction adjusting structure for changing the emission direction of the laser beam in a plane intersecting the plane including the tubular axis of the first piping, by changing the direction of the laser head,

wherein the circumferential-direction position adjusting structure includes a rail mounted on a surface of the first piping,

wherein the rail includes a ring shape surrounding a periphery of the first piping, and

wherein the circumferential-direction position adjusting structure further includes a cart [[travelling]] traveling on the ring-shaped rail as a track,

wherein the radial-direction position adjusting structure includes one end facing the first piping,

wherein the radial-direction position adjusting structure includes a guide roller provided at the one end thereof, and

wherein the guide roller makes a rolling contact with a circumferential surface of the first piping.

4 (Previously Presented): The apparatus for improving residual stress of piping according to claim 2 or 3, characterized in that

the laser head is provided in a laser head support portion so as to be moved in an oscillatory manner.

5 (Previously Presented): The apparatus for improving residual stress of piping according to claim 2 or 3, characterized in that

a plurality of the laser heads are provided in a laser head support portion.

6 (Cancelled):

7 (Previously Presented): The apparatus for improving residual stress of piping according to claim 2 or 3, wherein the ring-shaped rail comprises two semi-arcuate rail members.

8 (Previously Presented): The apparatus for improving residual stress of piping according to claim 2 or 3, wherein the cart travels along a circumferential surface of the ring-shaped rail.

9 (New): The apparatus for improving residual stress of piping according to claim 2, wherein the radial-direction position adjusting structure includes a support portion supporting the guide roller and fixed to one end of the tubular axial-direction position adjusting structure, and

wherein the radial-direction position adjusting structure slidably moves with respect to the support portion.

10 (New): The apparatus for improving residual stress of piping according to claim 3, wherein the radial-direction position adjusting structure includes a support portion supporting the guide roller and fixed to one end of the tubular axial-direction position adjusting structure, and

wherein the radial-direction position adjusting structure slidingly moves with respect to the support portion.

11 (New): The apparatus for improving residual stress of piping according to claim 9, wherein the emission-direction adjusting structure includes a slide and an arcuate-shaped piece,

wherein the arcuate-shaped piece is fixed to the radial-direction position adjusting structure and aligned with the plane including the tubular axis of the first piping, and

wherein the slide slidingly moves along the arcuate-shaped piece in an arcuate manner.

12 (New): The apparatus for improving residual stress of piping according to claim 10, wherein the first emission-direction adjusting structure includes a slide and an arcuate-shaped piece,

wherein the arcuate-shaped piece is fixed to the radial-direction position adjusting structure and aligned with the plane including the tubular axis of the first piping, and

wherein the slide slidingly moves along the arcuate-shaped piece in an arcuate manner.